Lauren M. Fry, Ph.D.

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Career Summary

I am a principal investigator at NOAA Great Lakes Environmental Research Laboratory, leading hydrological research activities. Since 2010, I have focused my career on advancing Great Lakes hydrological modeling with applications to monitoring and understanding changes in Great Lakes water budget components, improving simulations and seasonal forecasts, and expansion and evaluation of the NOAA National Water Model into the Canadian portion of the Great Lakes basin. Much of my work has centered on providing improved information to the public and to water resources managers, including the International Joint Commission Boards of Control. My graduate work focused on the interactions between water resources, human health, and environmental engineering technology.

Education

Ph.D., Michigan Technological University (Environmental Engineering)	2010
M.S., Michigan Technological University (Environmental Engineering)	2005
B.A., Gustavus Adolphus College (Physics)	2000

Professional Appointments

Physical Scientist, NOAA Great Lakes Environmental Research Laboratory	present
Technical Lead for Great Lakes Hydrology, U.S. Army Corps of Engineers Detroit District Great Lakes Hydraulics and Hydrology Office	2019-2020
Lead Forecaster, USACE Detroit District Great Lakes Hydraulics and Hydrology Office	2014-2019
Postdoctoral Fellow, Cooperative Institute for Limnology and Ecosystems Research, University of Michigan at NOAA Great Lakes Environmental Research Laboratory	2012-2014
Postdoctoral Fellow, Michigan Technological University	2010-2011
Graduate Research Fellow, Michigan Technological University	2006-2010
Graduate Teaching Assistant, Michigan Technological University	2010
Environmental Justice and Pollution Prevention Fellow, Michigan Technological University at U.S. Environmental Protection Agency	2004-2005
Peace Corps Volunteer, Cameroon	2002-2004

Representative Professional Service

U.S. Co-Chair of the Hydrology Subcommittee and the Routing Model Update Subcommittee of the Coordinating Committee for Great Lakes Basic Hydraulic and Hydrologic Data

Member, Great Lakes-St. Lawrence River Adaptive Management Committee

Extensive outreach to various groups including members of the media, university seminars, public engagements, and STEM programs.

Representative Peer-Reviewed Publications (* Indicates publications by mentees)

Fry, L.M., Apps, D., and Gronewold, A.D. (2020). Operational seasonal water supply and water level forecasting for the Laurentian Great Lakes. *Journal of Water Resources Planning and Management*. DOI: 10.1061/(ASCE)WR.1943-5452.0001214.

Gaborit, E., Fortin, V., Tolson, B., Fry, L., Hunter, T., and Gronewold, A.D. (2017). Great Lakes Runoff Inter-comparison Project, phase 2: Lake Ontario (GRIP-O). *Journal of Great Lakes Research*, 43(2), 217-227.

Bolinger, R.A., Gronewold, A.D., Kompoltowicz, K., Fry, L.M. (2017). Application of the NMME in the Development of a New Regional Seasonal Climate Forecast Tool. *Bulletin of the American Meteorological Society*, 98(3), 555-564.

* Kult, J.M., Fry, L.M., Gronewold, A.D., and Choi, W. (2014). Regionalization of hydrologic response in the Great Lakes basin: Considerations of temporal scales of analysis. *Journal of Hydrology*, 519B, 27 November 2014, Pages 2224–2237.

Fry, L.M., Gronewold, A.D., Fortin, V., Buan, S., Clites, A.H., Luukkonen, C., Holtschlag, D., Diamond, L., Hunter, T., Seglenieks, F., Durnford, D., Dimitrijevic, M., Subich, C., Klyszejko, E., Kea, K., and Restrepo, P. (2014). The Great Lakes Runoff Intercomparison Project Phase 1: Lake Michigan (GRIP-M). *Journal of Hydrology*, Volume 519D, 27 November 2014, 3448–3465.

Mayer, A., Winkler, R., and Fry, L. (2014). Classification of watersheds into integrated social and biophysical indicators with clustering analysis. *Ecological Indicators*, 45(2014), 340-349. doi:10.1016/j.ecolind.2014.04.030

Fry, L.M., Hunter, T.S., Phanikumar, M.S., Fortin, V., and Gronewold, A.D. (2013). Identifying streamgage networks for maximizing the effectiveness of regional water balance modeling. *Water Resources Research*, 49(5), 2689-2700. doi:10.1002/wrcr.20233

Representative Recent Scientific Presentations

Fry, L.M., D. Apps, Z. Miller, A.D. Gronewold. 2019. Employing ensemble prediction to enhance the value of Great Lakes seasonal water supply and water level forecasts. American Geophysical Union Fall Meeting, Dec. 9-13, San Francisco, CA.

Fry, L.M., E.J. Anderson, L. Read, and A.R. Nasab. 2019. Evaluation of Precipitation Fields for National Water Model Prediction over Large Lakes and International Basins. American Geophysical Union Fall Meeting, Dec. 9-13, San Francisco, CA.

Fry, L.M., and D. Apps. 2019. Analysis of nearly 120 years of Great Lakes water supply to identify changes in extreme events from monthly to interannual time horizons. International Association for Great Lakes Research Conference, June 10-14, Brockport, NY.

Honors

2018 U.S. Army Corps of Engineers Great Lakes and Ohio River Division Hydrology, Hydraulics, and Coastal Engineering Community of Practice Professional of the Year